

CLAIMS

WHAT IS CLAIMED IS:

1 1. A method of manufacturing an integrated circuit comprising:
2 providing a substrate, the substrate including a layer
3 including germanium;
4 providing a gate structure above the substrate;
5 pre-cleaning the substrate with an argon and hydrogen
6 plasma; and
7 siliciding the substrate.

1 2. The method of claim 1, wherein the pre-cleaning utilizes a
2 hydrogen argon plasma.

1 3. The method of claim 1, wherein the pre-cleaning also utilizes
2 an HF dip.

1 4. The method of claim 1, further comprising:
2 exposing the substrate to a wet bath.

1 5. The method of claim 1, wherein the gate structure includes a
2 polysilicon conductor.

1 6. The method of claim 5, wherein the polysilicon conductor is
2 pre-cleaned and silicided.

1 7. A method of pre-cleaning a top surface of an IC substrate
2 before silicidation in a chamber, the method comprising:
3 providing a plasma including hydrogen in the chamber; and
4 removing native oxide from the IC substrate.

1 8. The method of claim 7, further comprising providing a wet
2 bath to reduce a thickness of the native oxide.

1 9. The method of claim 8, wherein the wet bath utilizes
2 hydrofluoric acid.

1 10. The method of claim 8, wherein the chamber is a vacuum
2 chamber and a metal layer is deposited on the IC substrate in the chamber
3 after the pre-clean step.

1 11. The method of claim 10, wherein the thickness of the native
2 oxide on the IC substrate is eliminated using the wet bath.

1 12. The method of claim 7, further comprising providing a silicide
2 layer.

1 13. The method of claim 7, further comprising evacuating the
2 chamber.

1 14. The method of claim 7, wherein the plasma includes argon.

1 15. The method of claim 7, wherein the IC substrate includes a
2 germanium containing gate conductor.

1 16. The method of claim 7, wherein the chamber is part of a
2 deposition tool.

1 17. A method of manufacturing a transistor on an integrated
2 circuit, the method comprising:

3 providing a gate structure on a top surface of a strained
4 silicon layer or a silicon germanium layer;
5 providing a plasma including hydrogen and argon to remove a
6 native oxide material; and
7 siliciding the top surface.

1 18. The method of claim 17, further comprising utilizing
2 hydrofluoric acid to remove a portion of the native oxide material before
3 providing the plasma including hydrogen and argon.

1 19. The method of claim 18, wherein the siliciding is a nickel
2 siliciding process.

1 20. The method of claim 19, wherein the top surface includes a
2 silicon/germanium gate conductor.